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September 12, 1994

EX PARTE

DOCKET FILE COPY ORIGINAL

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: PR Docket No. 93-61
Automatic Vehicle Monitoring Systems

Dear Mr. Caton:

On Friday, September 9, 1994, Jay Padgett, Chairman of the Consumer Radio Division of the Telecommunications Industry Association, Gary Green, Michael Pettus and George Flammer, of Metricom, Inc., and Larry Solomon and I, of this firm, met with Bruce Franca, Richard Engelman, and Michael Marcus, of the Office of Engineering and Technology, to discuss the views of the Part 15 Community as stated in various filings of the Part 15 Community on proposed solutions and compromises in this proceeding. The attached materials were used in connection with our discussions.

Two copies of this letter are being submitted to the Secretary of the Commission pursuant to § 1.1206(a)(1) of the Commission's Rules. Because meetings with other FCC personnel ran late into Friday afternoon, it was not possible to file these materials on Friday afternoon.

Sincerely,

Henry M. Rivera

Henry M. Rivera

HMR:lmc
Attachments
cc: Bruce Franca
Richard Engelman
Michael Marcus

No. of Copies rec'd 0+1
List ABCDE

Part 15 Perspectives on AVM/LMS Proceeding

Metricom, Inc.

TIA Consumer Radio Section

September 9, 1994

Interference

Wideband LMS 902-928 MHz Receivers:

- Efficient interference collectors
- Sited to optimize receipt of all in-band signals
- Very sensitive to ALL in-band signals

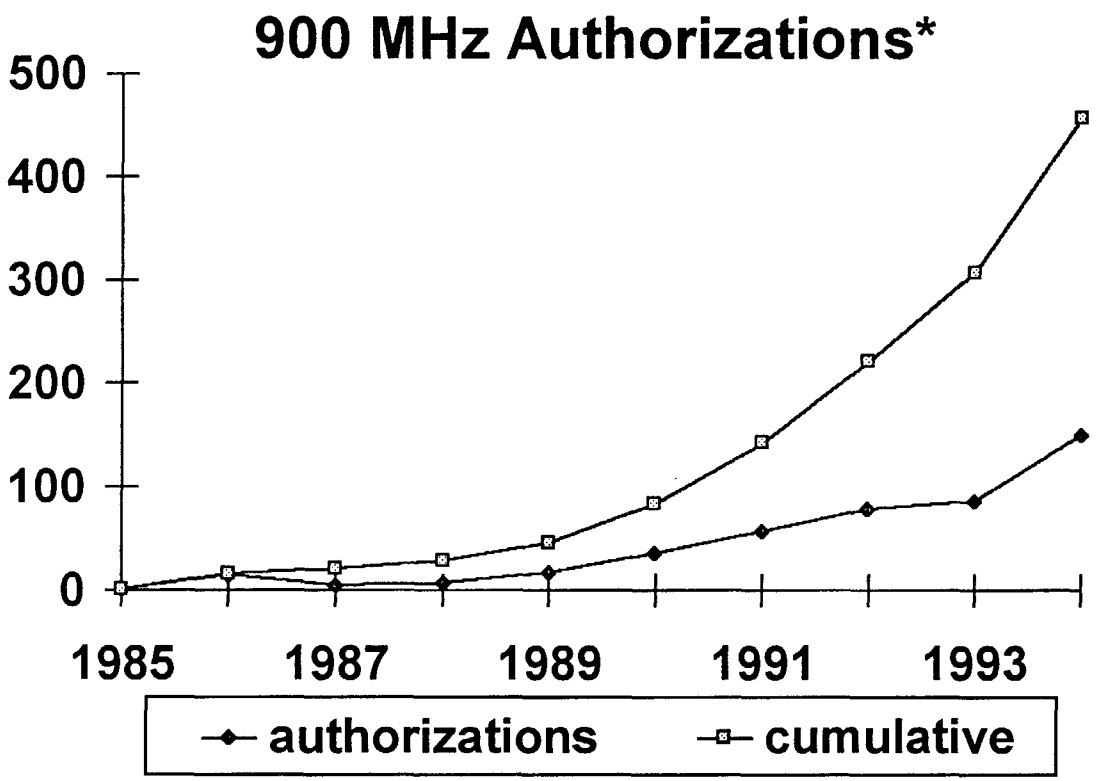
Interference

902-928 MHz Transmitters:

- Many and varied
  - Government and Parts 15, 18, 90, 97
  - Narrow and wideband
  - High-powered
  - Mobile
- Very densely located
- Many owned by consumers
- Have only begun to appear in quantity

Interference

Part 15 Certifications Increasing:



*Lovette, "Darwinism and the ISM Bands," DOC: IEEE P802.11-94/mar

Interference

Now widely recognized as a major issue in this proceeding:

- Compromises are being proposed
  - By parties to the proceeding
  - By the FCC
- Progress is very slow
- Very resource intensive

Staff Proposal

Non-Interference Presumption:

- Generally acceptable to Part 15 community*
- Disagreement is over thresholds
  - Antenna height
  - Effective radiated power
  - Field disturbance sensors
- Non-functional if rebuttable

*assuming no wide-band LMS forward links

Staff Proposal

Threshold Issues:

- Makes Part 15 resemble licensed service
  - Each antenna location must be identified, scrutinized
  - Results in increased cost to consumers
- Imposes significant enforcement and legal burdens
  - Which specific device is causing interference?
  - House-to-house searches?

Staff Proposal

Height Restrictions Inappropriate

- Technically meaningless
  - Fail to consider terrain and structures
  - LMS receivers located and optimized to receive from street-level and in-building LMS transponders
- Affect many Part 15 systems
  - Ademco, Cylink, Metricom, Tetherless Access, Western Multiplex, etc.
  - Inter-building LAN links, cordless telephone on a 5th floor balcony, PBX base station on parking garage, etc.

Staff Proposal

Field Disturbance Sensors:

- Not a threshold
- Not technically meaningful
- Arbitrarily singles out a class of Part 15 devices

Staff Proposal

Effectively concentrates Part 15 operations into 14 MHz:

- Some Part 15 systems designed to require more than 14 MHz
  - Part 15.247 rules require spreading
- Reduces opportunity of all systems to avoid interference
- Protected LMS would reduce useable Part 15 spectrum by nearly 50%

Staff Proposal

Interference to Part 15 Ignored:

- LMS will increase interference to Part 15
  - Increased *new* traffic in band
- High-power, wideband forward links are especially troublesome
  - Affects all other users of band significantly
  - Not necessary or efficient for locating services

Staff Proposal

A change of this magnitude to the original NPRM requires formal notice and comment.

Part 15 Community Proposal

Interference -- A Key Issue:

- Part 15 and LMS will interfere with each other
- Hard data and field testing support this
- Hierarchical approach to solving interference issues will present enforcement nightmare
- Extent of interference will ultimately depend on Part 15 and LMS market penetration

Part 15 Community Proposal

Forward Link Interference:

- Wideband forward links should not be permitted
  - Will interfere with most users of band
  - Likely to limit Part 15 operation to 4 MHz
  - Inefficient and not functionally necessary
- Move narrowband forward links to upper edge of the band
  - Reduces front-end interference potential
  - Close to paging channels in 930 MHz area

Part 15 Community Proposal

Reverse Link Interference:

- Presumption of non-interference to LMS receivers
- No Part 15 thresholds
- Power and duty cycle limits must be developed for LMS reverse links

Part 15 Community Proposal

A True Compromise:

- Permits LMS to be established as a new service
  - Initial position was to maintain the *status quo*
- Requires Part 15 to accept significantly more interference
- Permits Part 15 to continue to operate
- Requires development of best technology
- Encourages cooperation between Part 15 and LMS

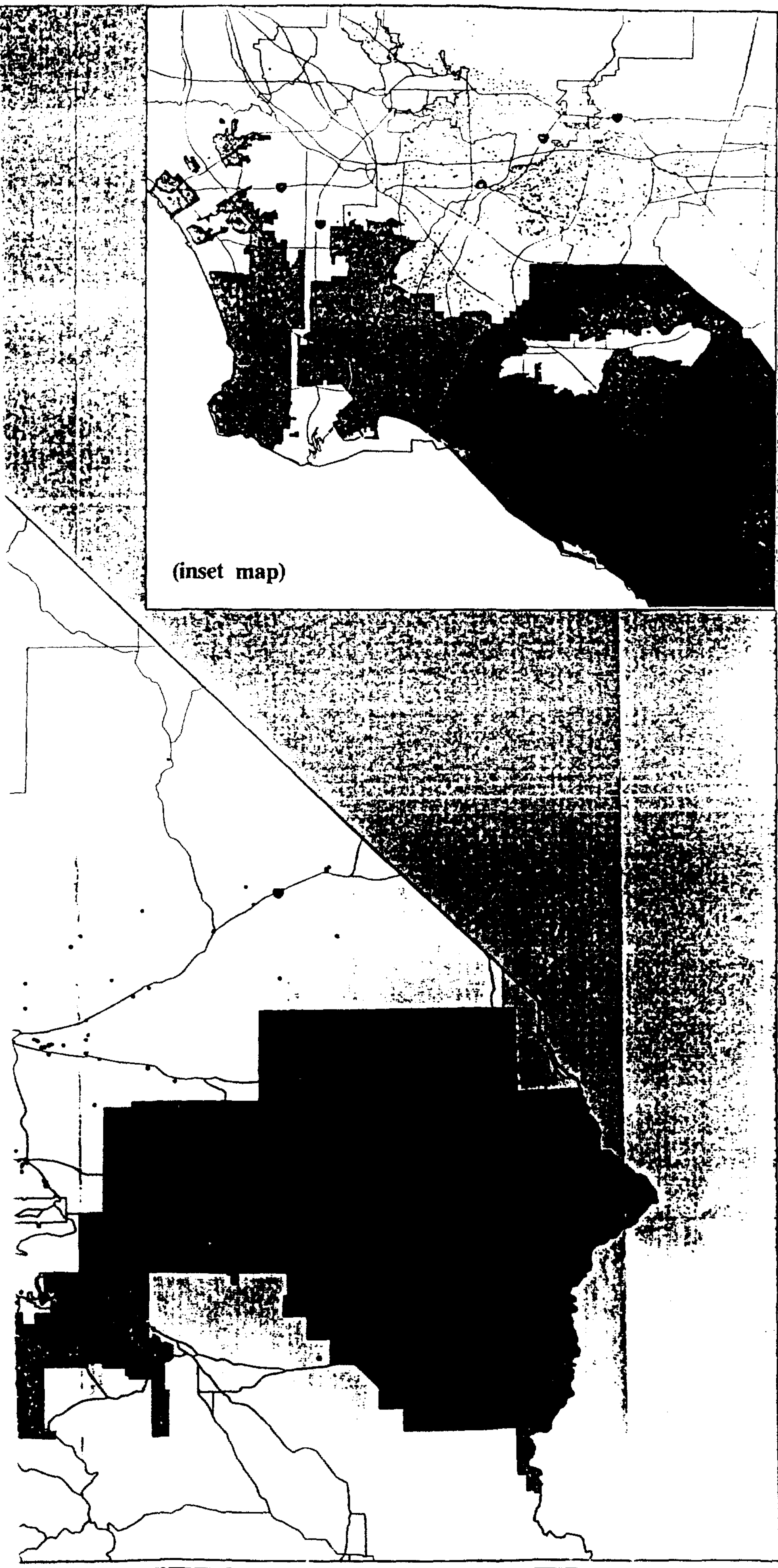
LMS Community Proposal

Not a Real Compromise:

- Establishes a *new* licensed service in the band
  - Not anticipated by Part 15 operations
- Maintains the hierarchy
  - Good faith negotiations change nothing
- Makes no accommodation for Part 15 operations
- Based on analysis of historical interference
  - Not a reliable forecast of future interference

NETCOMM FIELD TESTS – NetComm, Edison's new Network Communication system, is currently linking more than 1000 Edison Valencia-area customers' new all-electronic meters to the utility's computers via a communications network of high-frequency packet switching radios located atop street lights.

Southern California Edison



NetComm
Packet Radio Network

LEGEND

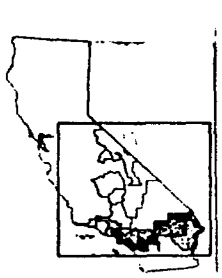
- NetComm Packet Radios
- SCE Substations
- Desert Springs Region
- Inland Region
- North Coast Region
- Northern Region
- Orange County Region
- San Gabriel Region
- Southern Region
- Non-Edison
- Freeway
- State Boundary
- SCE District Boundary
- Interstate Highways
- California Highways
- U.S. Highways

Total Number of Radios:

5,268

As of: June 23, 1994

INDEX MAP OF CALIFORNIA



Unit Manager:

Map Projection: UTM

Approved by:

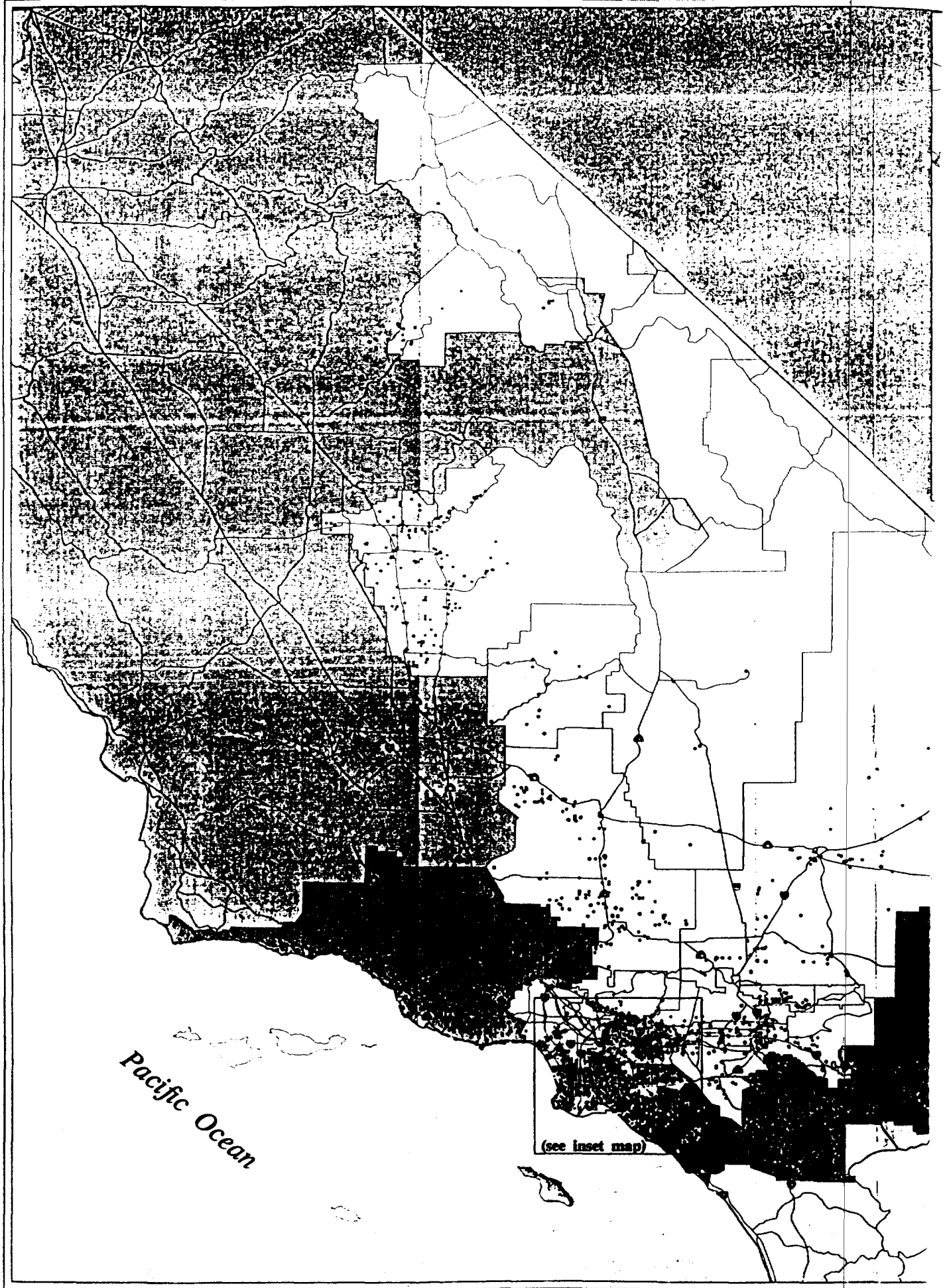
NetComm GIS Laboratory

Date: July 05, 1994

Miles

0 6 12 24

NORTH


Pacific Ocean
(see inset map)